Reviewer's report

Title: Study protocol. Active video games to promote physical activity in children with cancer: a randomized clinical trial with follow-up

Version: 2 Date: 25 October 2013

Reviewer: Corinna Winter

Reviewer's report:

General Comment:
The study design presented in the manuscript contributes to the growing attempt to enhance physical activity in pediatric cancer patients. The new aspect of the study is using active video games in this patient group. I figure this a good attempt as “normal” activities cannot be expected in this greatly restricted patients especially when during treatment. Active video games offer a good chance to at least slightly enhance physical activity and have great motivational advantages.

As far as language is concerned I would recommend an expert/native English speaker to review the manuscript on language.

Please consider the following comments:

Major Compulsory Review

Abstract
1. Please revise your abstract according to the comments on the different sections within the text.

Background
2. In general I agree with the background section which gives a good overview of the current state of research. Here are some comments I would asked the authors to consider:

3. page 6:
I do not think that the hospital setting is the key to effective interventions. It is rather the fact that interventions are supervised in those settings.

4. page 7:
Is shortening of sedentary periods not a way of promoting physical activity? Promoting physical activity is the aim of your study. I would rather point out that active video games are not an alternative to being physically active in healthy population but can be very useful in those with limitations as it can e.g. be played even when being seated or lying in bed.

Methods/Design
5. Trial design (page 9):
I do not agree to naming the study single-blinded. Even if patients do not know about the different interventions they will find out once the interventions start.

6. Participants (page 9):
Please give some more information about your inclusion criteria, e.g. Why do you only include patients with vincristine included in treatment? Do you not figure an intervention would be helpful for all patient groups? Why do you exclude CNS tumors, those patients could especially benefit from the intervention e.g. concerning balance. If you exclusively decide for patients treated with vincristine please name the entities.

7. Recruitment (page 9):
besides patients’ verbal consent do you seek written parental consent

8. Intervention (page 10):
I can understand that you were searching for an easy way to promote physical activity without extensive need of staff. This is why your interventions are not supervised. However, results for interventions were better if a supervisor was present. Furthermore video games can easily be manipulated by small quick movements that are significantly less exhausting for the players. How do you control that patients play the games as intended? Are parents supervising their child?
Can you give some information about which games patients are supposed to play. Will they also use the balance board?

9. Outcome measurementss:

page 11:
Can you give some information about the validity of the Fitpit? You mention in your limitations that this instrument has not been widely used in research. I do not think that your subjective instruments are an alternative and the objective measurement of physical activity which adds a lot of precision to your study especially as physical activity is your primary study aim. Option 1 would be to use a well-validated instrument; Option 2 would be to perform a small validation study of the instrument in your patient group.
In general I consider subjective measurements of physical activity problematic especially in children. They have great problems in recalling their physical activity. Also for parents it is difficult to assess their child’s physical activity. With the activity diary you might be able to assess defined activities like participation in sports classes however from my experience I do not agree that they provide information about intensity, frequency and duration of activities.

page 11:
It does not become completely clear (neither in the text nor Figure 1) which physical activity measurements will be performed at the different points of assessment. From your discussion I would get that the Fitpit is only used for the first assessment. Is that true? If so I would strongly recommend objective
physical activity measurements at all points of assessment.

Do you think the M-ABC can be performed by all patients, e.g. for some patients jumping and balancing will not be possible? Will you make modifications? Can you give some information on the testing setting e.g. will patients do the test during inpatient stays when attached to medical devices?

Concerning the interviews you will do on favorable activation methods only one is offered. How can patients say which one they prefer then?

10. Randomization

As mentioned before I would not call the methods single blinded. Patients will for sure find out what the alternative group is when treated in the same unit. If possible you could blind the testing staff not knowing whether patients belong to the intervention or the control group. Otherwise I would not recommended naming the study blinded

Discussion

11. I am skeptical whether a 8 week intervention will help avoid health risks in later life. From my experiences effects of interventions hardly outlast the intervention itself, probably your long term data will add information here

12. Concerning your limitations, please note my comments on the Fitpit from the Methods section

13. I think the strengths of your study become clear from the rest of the manuscript

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Needs some language corrections before being published

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:

I declare that I have no competing interests